

Big Bang and String Theory Stories by Bibhas De

Bibhas De's

African art – artist unknown

BIG BANG AND STRING THEORY STORIES

Big Bang Cosmology and String Theory Stories by Bibhas De

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FROGPOND COSMOLOGY

The frogpond in a clearing inside a deep jungle has been here a long time. High above the pond is the dense canopy of the jungle. The clearing itself is circled by dense-packed tree trunks. The pond is fairly large but shallow, and a community of frogs has lived here for many generations. They have evolved the many qualities necessary to form and live in a society atmosphere. Beyond that, they have also evolved certain higher aspirations of the mind – inspired mostly by the wise among them. At the time of this story, there were three such wise frogs in particular - names of Boka, Burbak and Ahmak. Their particular interest was to gain knowledge of the Universe.



[courtesy: www.cwf-fcf.org]

The state of cosmology at this point in time was thus: The Universe had a solid termination below, a semi-transition layer above, and beyond this - the final dense dark edge. Through this limiting dark edge however, some light filtered through. So the idea was that beyond the Universe there was just light – nothing else. No matter, no dimensionality, no directionality, just light. This light was slowly turned on and off in a cyclic fashion - and that created the frog 'day' and the frog 'night'. The horizon was a circle which enclosed the semi-transition layer. One could cross this circle and venture beyond to the place where there was just the solid bottom underfoot and no atmosphere. One did not venture out very far in this forbidding territory. Monstrous alien beings of all descriptions have been spotted here. It was not safe.

Now the three wise frogs felt the strong urge - as all wise frogs do - to leave their own special mark on this cosmology. But to do so they needed new information, new observations. As it turns out, they were in luck.



[courtesy: [wikimedia](https://commons.wikimedia.org/)]

Around about this time there was a great forest fire, and when it got done, the canopy was all charred. The frogs sensed the great holocaust, and stayed under water mostly to survive from it - except for taking an occasional peek. After the holocaust was over, there was sparkling bright, unfiltered daylight over the pond. As the charred branches and burned leaves fell, the canopy gradually became clearer. The light on the pond started to get brighter by the day. The three wise frogs immediately sprung to action.

Boka said: The edge of the Universe is flying away from us. The Universe is expanding and letting in more light. This is why we are seeing more and more light every day.

Burbak said: That means the Universe has exploded. This tremendous light and sound and agitation above the semi-transition layer we saw was the explosion. And the yellowish light that we saw – that had tremendous heat associated with it - was the very first light of this explosion.

Now Ahmak rose to the occasion: But along with yellowish light and heat, we also so coils and drapes of dark stuff fill the forest. That must be the basic underlying phenomenon. The basis of everything is coils and drapes.

And thus it was that the frogs began to close in on the Universe. What it was up until now was irrelevant. Then drapes butted against one another, causing a tremendous explosion. The Universe started expanding. Everything was ultimately coils and drapes.

The name of Boka became forever associated with *The Expanding Universe*, Burbak with *The Original Explosion*, and Ahmak with *The Coil Theory and the Drapes*.



THE HAZE

The Kingdom of Bombagor is rife with rumors of an alien invasion. The spectacular Valley of the Moon has been settled by a greenish-purplish haze that does not appear to be like anything of this Earth. Scientists have had many stabs at it, but failed to explain the particular color of the glow. The problem is, any instrument that is taken there to study the haze starts to malfunction. No credible scientific data can be acquired.



[Image source: www.digitalsky.org.uk]
The Haze

Naturally, the problem is then referred to the highest authority in Alien Science, Dr. Jonas Motherwell of the Royal Bombagorese Space Authority. An astronomical instrument builder all his life, Motherwell quickly gets to the heart of the problem. He puts his instrument package inside a specially shielded enclosure, having a rock crystal window to admit light. "This ought to do the job," says Motherwell.

His colleagues ask: "How can we be sure though, Jon?"

Motherwell replies: "What we will do is this. We will do that which has never been done before, to discover that which has never been discovered before. We will position this shielded instrument package looking at the Haze. But an identical instrument package without the shield will be installed some distance away - free from any influence of the Haze. Then, at exactly the same instant of time, we will have the two stations look up at the sky and take pictures of the Moon. These two pictures should be identical in every respect. That will be the absolute guarantee that the shielded instrument is functioning properly. Therefore, any picture it takes of the Haze is perfectly faithful, *scientifically speaking*."

To make a long story short, Motherwell's pictures of the Haze were most astounding, and led to the greatest discovery in the history of man. From within the Haze, there emerged the outline of the face of God, and the emanations from the Haze were interpreted to contain intimations of immortality. He became a celebrated hero of unprecedented magnitude - and regarded as a greater explorer than Magellan, Columbus, Galileo, Newton and Einstein.

Motherwell's book *The Very First Haze* describing this experience became a bestseller in Bombagor. He became so busy on the lecture circuit that he could not travel to all the venues all the time. So he used the RBSA videoconference facility to speak to the far corners of the World. Asked about his worldview, he would famously say: My job is to build that which has never been built before, to discover that which has never been discovered before.

One day, fifteen years on, the airwaves are burning up with the much-expected news: Motherwell has been awarded the Magnificent Prize. A full day of festivities follows. In the evening, a very tired Magnificent Laureate sits contentedly in his office, chatting with a colleague.

At one point, the colleague asks: "By the way Jon, what happened to the twin Moon pictures?"

"They were Ok," replies Motherwell.

"Can I see 'em?"

"Well, I don't think we have them anymore. When we moved offices in connection with my appointment as the RBSA HQ Chief Scientist, they got lost."

The colleague becomes curious. He tracks down the RBSA technician that worked with Motherwell immediately following the Haze experiment. The colleague takes him to the local Appleby's Bar and invests several rounds of draft beer.

The technician finally loosens up and remembers: "The two pictures of the Moon looked completely different. But Jon said they were identical, *scientifically speaking*. He told me not to worry about it. So I did not think further about this. What do I, a lowly technician, know?!"

"OK, but what did the two pictures look like?"

"Hey man, I don't want to get into any trouble. So this is just between you and me."

"Sure."

"One was a regular Moon shot. The other looked like an Anchovy-and-Jalapeno-Pepper Pizza from Papa John's."

THE HOT DAMN HYPOTHESIS



The Royal Swedish Academy (kva)

On the day of summer solstice at high noon, three American brothers are passing in front of the Royal Swedish Academy of Sciences (kva) in Stockholm. They come upon a tall Swede who is just walking out of the kva.

1st American: You are taller.

Swede: Excuse me!

2nd Am: You are taller than what our Hot Damn Hypothesis says.

Sw: What is the Hot Damn Hypothesis and what does it have to do with me?

3rd Am: Hot Damn Hypothesis was formulated by our Grand Dragon Bishop LaMuerte. It says that if you meet a Swede at high noon on summer solstice in front of the kva, he will be 5 feet 10-1/2 inches tall.

Sw: Well, I am 6 feet 2 inches. So your hypothesis is wrong.

1st Am: No, the HDH is Received Truth and cannot be wrong. So give us a minute to figure out what is going on here. [The three brothers huddle. Suddenly their faces light up all at once.]

2nd Am: We've got it! It is nothing less than a shocking physics discovery. The HDH also says that after high noon, the height will be greater. That means that even though our watch says high noon, it is actually later than that.

3rd Am: So our discovery is that the speed of spinning of the Earth is *accelerating*!

Sw: Hot damn!! Well, come in, come in. Let's go into the building and have some refreshment while I see if I can rustle up couple of three Nobel Prizes.

GODTALK

By the year 2015 physics was humming like at no time before. The two major areas of research, the Great Gong Theory and the Superthread Theory practically defined all of physics. So naturally, the question of Merger & Acquisition arose. After some preliminary meetings between the parties, it was decided that this should be a merger of equals, and not an M&A. The merged entity would be led by two co-equal CEOs: Professor Tex Austin and Professor Everard Vitton. It was noted that while the Great Gong Theory had great experimental success, the Superthread Theory had captured the public's imagination. So there would be great synergy.

The first project following the merger was for the Gongers to help the Threaders perform experimental verification of the Superthread Theory - something the critics have been clamoring for for a long time. In response to this clamoring, Professor Vitton finally came through with an elaborate theory that calculated the resting body temperature of God to be 314.159265 ± 0.0000 degrees Kelvin.

And this how the \$100 billion GOBE Satellite was born in Bombagor - tasked to measure the above temperature. The man in charge of this project was none other than Professor Rumpelstiltskin Pumpnickel of the Royal Bombagorese Space Agency. An instrument builder all his life, he was a shoe-in for this position. The first thing he did was to name the satellite after his spiritual guide Guru Om Baba the Eremite, an Eastern mystic who first suggested the idea of applying the Superthread Theory to God.

To make a long story short, in the year of our Lord 2020 the Nobel Prize for Physics was given unshared to Professor Rumpelstiltskin Pumpnickel of the RBSA

for spectacularly verifying the Superstring Theory by measuring the resting body temperature of God with the extreme precision of 5 parts per million.

The announcement of the discovery on October 4 of that year was met with great enthusiasm worldwide.

The Vatican issued laudatory comments to the effect that warmth of the Lord is the greatest of all comforts.

Professor Everard Vitton, who sat on the Albert Einstein Distinguished Chair of the Bombagorese Institute of Advanced Study, explained that this relates to his theory of threadlike emanation from God. This emanation is in the form of undulating Draips that are a staple of the Superthread Theory.

And the superfamous British physicist whose name needs no mention declared this as the greatest discovery of all time to come.

And of course the critics of the Superthread Theory fell completely silent.

The Chairman of the Nobel Committee for Physics, Erki Eriksson, answered questions at a Press Conference held following the announcement ceremony. A very persistent reporter from Transnistria asked:

Q: That is indeed a most phenomenal discovery. But how'd he do it?

Erki: Well, he used the most modern techniques in temperature measurement, coupled with computer software that helped refine that measurement. And indeed, we the Physics Nobel Committee - we call ourselves the *Nobel Class of 2020* - feel that this is the most phenomenal discovery ever, giving us the very first scientific evidence of the existence of God.

Q: OK, but how'd he measure the temperature in actuality?

Erki: He used a tiny thermocouple probe that he developed himself. It has a very novel and innovative construction.

Q: I mean, how did he take the temperature of God?

Erki: Let me give you some details. The GOBE Satellite was first placed on a geosynchronous orbit. There it stayed for two months to acclimatize its electronics to the environment and to prepare to meet God. After two months the time came for the resting season of God. Then, using the Hohmann Transfer Ellipse, the satellite was stationed at the orbit where the target temperature could be measured with the

greatest of accuracy. I believe the readings of the instrument were telemetered to the Earth in real time, and the data were analyzed at the RBSA lab. The TDRSS network was used.

Q: Excuse me, Sir, but you are avoiding my question. You are giving us all kinds of information except the one that is the crux of this discovery. Thermocouple, telemetry ... we know all this. There is nothing new here. What I am asking you, again, is: How did he apply the temperature probe to God's ... er ... body?

Erki: Well ... that's not relevant. Let's move on to the next person.

Q: [The same reporter persists] It seems to me that crucial scientific information with regard to the design of the GOBE Satellite is not being disclosed to the public. Did Professor Pumpnickel apply his probe to God orally or ... er ... did he stick it ...you know ...?

Erki: Well ... that is of no concern to the Nobel Class of 2020. It is a private matter between the Lord and Professor Pumpnickel. It comes under the doctrine of Doctor-Patient Confidentiality. Surely you have heard of that?! Who's next with a different question?

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DON CALZONI WANTS TO AWARD NEW PHYSICS PRIZE

Don Calzoni is a very wealthy man who has made his fortune in olive oil. He is in a stage of life where he has everything in life that money can buy. Still and all, there is a lingering emptiness in him. But he doesn't know what it is. Finally, his shrink identifies it. The shrink says: "You don't get no respect. That's it. You want to buy respectability. Consult a Madison Avenue spinner on how you can go about it."

On the appointed date, the spinner arrives. Don Calzoni sits down with him. The following conversation takes place.

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Don Calzoni: I don't get no respect. How can I best throw money at something to buy respectability. From the real intellectual folks, I mean.

Spinner: My company experts have developed just the plan for you. We will set up a new physics prize. It will be called the Calzoni Prize for Postmodern Physics. The recipients will be created Calzoni Laureates.

Calzoni: I like it already! Go on. But what does Postmodern mean?

Spinner: It is just a good word to have. Anyway, the main thing is to make the award money so starkly large that it dwarfs all the awards past, and is a good multiple of the Nobel Prize. Let us say five prizes will be given out each year, each equal to US\$10 million. Is that workable?

Calzoni: No problem.

Spinner: Good. Then let's get into the nitty gritty. First we have to hire a suitable consultant from within the establishment and give the guy a few millions in consulting fees. He will help us identify the candidates upon whom the prize can be most leveraged.

Calzoni: I don't understand that. How do you leverage a prize?

Spinner: Well, if you just the give the prize to someone because he is doing great physics in energy technology, it is no good for you. You have to give it to people who are already famous and glamorous and are constantly in limelight. Then your name just gloms on to them.

Calzoni: Whether nor not they are doing good physics?!

Spinner: Exactly. It is not about physics. It is about buying respectability – as you said yourself.

Calzoni: Well ... er ... OK.

Spinner: So, if we give the award to physicists who are already centerstage, in no time your name will be in *New York Times*, *Nature*, *Science*, *Physics Today*, *PBS* ... – the bastion of the highest intellectuals. From there your name will spread like wildfire around the globe.

Calzoni: But critics will say ...

Spinner: Never mind the critics. Nobody listens to them. People will say they are jealous. Now, what we will do is give the prize to people with maximum Nobel potential. And when he gets the Nobel Prize, he will invite you to come to Stockholm as his guest. That way you can also bask in the Nobel light. Also, the Calzoni Prize will come to be known as a harbinger of the Nobel Prize for the candidate! The two hot areas of physics today are Big Bang and String Theory. Those are where our focus should be.

Calzoni: Can you give me an example of a candidate you have in mind?

Spinner: Absolutely. It is the superfamous Edward Witten of Princeton University. If you gave him, say, \$100,000, then he might reject it – to show he doesn't accept just any old prize from anyone. But US\$10 million? He will take it. All he will say in accepting it is: "I am soooo surprised."

Calzoni: Anything else?

Spinner: There is the issue of the manner of delivering the prize. We thought at first that we would wire the money straight to the awardee's bank. But that idea is already taken. So our plan is this. We will rent an eighteen-wheeler truck with a billboard painted on the right side – a blown up image of the \$10 million check! We will park the truck in front of the awardee's home at predawn. A chorus band will get out of the truck and start serenading the brand new Calzoni Laureate.

Calzoni: Let's get started then.

Spinner: OK. Let me call the consultant. Let's see ... it is about 2 pm in Texas now. He should be in his office.



Big Bang Cosmology: The Atom Primitif



鸦片馆

The Inn of the Seventh Happiness

L'Auberge du septième bonheur



THE BACKSTORY OF BIG BANG COSMOLOGY



[In the Great Centennial Synod of Big Bang Cosmology, the greatest concern was that the average citizen of the world would not possess enough intellect to understand the most refined of concepts: *The Atom Primitif* – a single dot with no length, no breadth, no height and no volume. Into this suitcase had to be packed the entire universe. This citizen, lacking the high mind to understand the fine points, would simply ask: How would you close the lid, even if you sit on it?

There was great debate for days on end on various suggestions offered. Then one day, the British delegate said: "I got it! Opium Divan!"

Then everybody said: "Of course, the Opium Divan!"

The strategy was adopted unanimously.

To this strategy were then adden the most intricate mathematics of space warp and the finest concepts of science fiction.

The result was what we see today: The triumphal march of Big Bang Cosmology among the masses of the world.] .

Like countless fellow world citizens before him, Gull E. Able one day fell through that space warp and landed right in front of the magnificent, colorful edifice that is *The Inn of the Seventh Happiness*. Located in a secret niche of a most eerie landscape, this would be an impossible place for anyone to find by himself. Gull was uplifted by the festive atmosphere of the Inn, with gaily colored, swaying paper lanterns festooning the grand entrance. A smiling young lady greeted him warmly at the front desk and invited him to check in his wallet. Gull promptly did so and the lady put it in a cubbyhole and gave Gull a claimcheck.

Now an equally winsome Attendant appeared and ushered Gull into the inner sanctum. Gull was taken aback to see the sharp contrast of this place compared to the frontage of the edifice. Here was a long hallway lined by tiny little rooms, semi-dark, smoke-filled and flea-infested. There was also a mighty stench. On the floor of each room were scatterd torn, filthy box spring mattresses. People were lying haphazardly all over the place, two or three to a mattress. They were making moaning and groaning sounds, or no sounds at all. Gull was seated on one of these mattresses with only one occupant, seemingly asleep.

The Attendant asked Gull most sweetly: "O Esteemed Guest, would you like to receive your treat orally, by inhalation or by shooting up? And if orally, would you like strawberry or mint flavor?"

A dazed Gull made his choice. The treat was administered. The Attendant said: "Please relax. The Abbe will be with you presently."

Gull slowly sank into a pleasurable languor. His senses began to be dulled, and his faculties fade.

After about fifteen minutes the Abbe, making his rounds, stopped to see Gull. The Abbe administered his two usual tests to ascertain that Gull was ready to receive The Law. First he gave Gull a piece of dried cowdung and said: "Here, have a piece of fine Belgian chocolate."

Gull took it, put it in his mouth, and ate with relish. The Abbe then asked: "What is your ATM password?"

Gull replied: "Gull005"

The Abbe signaled to his Assistant, meaning: Write it down.

"You are good to go," said the Abbe. "Now please receive The Law. After the session has ended and you have gone back through the space warp, all you will remember is The Law. Nothing else."

The Abbe then intoned The Law sonorously several times. Once the process was finished, he made a final check to see that Gull had got it right.

The Abbe asked: "Who is the Sayer of the Law?"

Gull replied: "The Abbe is the Sayer of the Law."

"What is the Law?"

"Not to doubt Big Bang, that is The Law.

Not to attack Big Bang-ers, that is The Law.

Not to believe critics, that is The Law."

"Good," said the Abbe. He turned to his Assistant and said: "This one is done."



And thus it came to pass that the citizens of the world never saw any merit in what the critics called "The Samsonite Problem" with Big Bang Cosmology. The rest of Big Bang Cosmology fell in place easily for the well-heeled citizens. .

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